

ICAN Ltd, Newfoundland, Canada

By Mr. Patric Brunet

My name is Patrick Brunet. I'm with ICAN, a Canadian company based out of St. John's Newfoundland. I'm from the Cadet City Office. I'll start with giving you an overview on the company, and I'll switch to software every now and then to show you what we're doing. ICAN is a software development and system integration company. We're a young team. The average age is around 35 years old. We have a team, as most of the company is marketing, engineering, software development, technical service.

We do sophisticated navigation and communication software. Communications are based on AIS facility. And we do GPS, DGPS infrastructure, as well as AIS infrastructure. And within the AIS infrastructure for the Canadian Coast Guard on the St. Lawrence River, the same thing for Halifax Harbor, Placentia Bay. We did the engineering for that, based on their requirements for those situations or locations. We do have a consulting service to design systems with Coast Guard as well as protecting nations in some of the Asian countries where we work.

Real-time navigation and information system. That's based on the charting system as well as on port maintenance and water level maintenance. We do have software data on S-57 data that is able to implement real-time water level information based on wireless link. If it's on the vessel, the message could be sent over the AIS link. Or if it's ashore, through the network with information for the water level monitoring.

That's actually being used by the Port of Montreal, which is monitoring water levels along their waters as well as downstream where they do have depth of friction for vessels that are able to come alongside. But if the water level is not high enough on the river, they would not be able to go through some of the sections of the river there. We have our very good expertise in communication and navigation systems.

We have a team that is from the marine industry. I'm a navigation officer from the commercial side of this, not with the Coast Guard, but with the Merchant Marine. We have people that are from the Coast Guard, and we have engineers that have worked with the Coast Guard before.

Our products are based on open architecture. All of our products are based on the Windows operating system, mainly NT-4, 2000, and now XP. We've never played with '98 or NE. We have kept away from the unstable platform.

We have a flexible and dynamic system. If a customer needs customization, we're able to do it either by developing more software, or reconfiguring our software. You can configure whatever you want in software as an info panel.

We have two main softwares that are targeted to the Merchant Marine or Coast Guard or other agencies. One is Regulus, which is a system which reads only one format

of chart at a time. It could be either raster or vector format, depending on your needs. But when you buy it, it reads only one format of chart.

We have another product which is called Aldebaran which is also an NCS, which reads multiple formats of charts which are vector, raster, as well as point data, plus depth, which we could implement right in the software as well.

We have another line of product which is targeted to the fishing industry which is called FINS, Fishing Information and Navigation System. It does all the fishing maintenance for the gear as well as the catch. Here you see our two main logos for Regalus and Aldebaran. Those are two navigation stars that are used in celestial navigation. That's where the name comes from.

Our ECS are designed for professional marinas. They're based on the IEC-94461974 standard as well as on the IMO. And they're based on the IMO current standard as well. We are not type-approved, and I'll tell you that. We have found that it could be a problem for lots of our customers if it was a type-approved system because lots of the functional capabilities that we provide could not be type-approved because they go against some part of the standard. So, that's one of the reasons why we're not type-approved.

Systems are easy to use. Anybody that has already used a computer will find it easy because it's Windows based. And someone that has never used a computer will be able to use it just on turning it on. And it will follow under the chart and open all the charts necessary for the voyage that are planned or even not planned. It's just based on the ship's position.

They are highly stable and don't crash as many computers do. We won't claim that it never happens. That's for sure. Most of the time we use off-the-shelf hardware. We try not to build a system with hardware dependent components.

So if you want that type of display, we can find it, or we do already provide it to some of our customers; brightness, waterproof, or anything you need. Most of those technologies are already available off the shelf. So, we're not re-inventing anything here.

Our features are highly configured as I was saying like the info panels, auto chart loading, route planning, data import/export to current market database or even to ECDIS. So, if you want to enter a list of way of point or route through an excel sheet, you can do that and import that to the software. So, it can be done ashore by someone else. It can be exported to another vessel if you're doing the same route in one company.

So, those are things that could be done. We can get the ARPA targets on the screen as well as radar info, AIS info. We have worked closely for the past four years to develop our AIS interface. And we're able to implement all the message, and we're actually up to the requirements of IMO for AIS display. We are at a minimum keyboard and display, but we do meet all the same requirements that the minimum keyboard meets,

which is just a small display of four lines which can do all the messaging and all the things. You can do all the same messaging with the software and the keyboard of the computer, which is a lot easier than using a ten-digit key pad.

Part of our planned products, we are looking at ECDIS. Not in the near future, but our systems are quite close to compliance. So if we need to get there, or we have sales that need to be of a type-approved, we could get to the type-approved level sooner than is actually planned. We're looking at other data products, data formats to implement there which are VPS or DNC.

That's how a system can look actually. You have the main system here, which could be on the wheelhouse. You could have remote, which are just display, keyboard, and mouse. And you can also have over a network another station on the vessel which could be in the captain's cabin or in the ship's office.

So, from that system you could build your route, do all illuminations and send it to the main unit where it could be used up on the bridge. Those are the sensors that we actually implement in the system, the archives, special lock, meter sounder, track point positioning, GPS, LORAN if needed, AIS which is a fully implemented two-way thing.

So, we can upload to the AIS transponder and get all the information from the AIS transponder. the DGPS, the auto pilots, and the fishing industry. We also hook to the gear finder which helps them find their net fill water. They know exactly where their trawl is in the water, referring to the vessel, length of the line and distance, depth, and angles from the vessel.

We do have a lot of different modules that could be applied depending on your needs. We do have the navigation module, which is really used by going out to position all their navigation aids. They have a database of their navigation aids, which is a digital database. We import that into the software, and we give them a target where to place the buoy in the water.

We have a survey module, which will do all your tracks needed for the survey, depending on how you build them, with the heading and then the spacing of all those tracks. Mobile access tracking is the same as AIS, but over a satellite link. So if the vessel goes at sea out of range of AIS shore station, it could still be tracked.

Radar overlay NIS are the two other models that we have. That's the navi model. That's the vessel. That the drop point of the vessel, which is the large circle there, and there's the smaller circle which is the buoy advertised position.

So they get all the information from their speed and the name of the navi, the bearing and the distance to where the buoy is to be placed. And the actual green bar there is green because the buoy is in the right position. If it was in the wrong position, it would be red. And it turns yellow if it's in an exit table radius.

Survey model. That's one of the format of chart display that's moved to being raster data. That's a reference tip. So any geo reference tip could be displayed into the software. Mobile access. That's what we use as satellite communications for long range AIS. That's a radar overlay. That's the coast of Newfoundland here. And we could have only the radar on the screen, or we could have that with the chart information as a real overlay.

That's the AIS, the network is working. You've got mobile station, and you've got shore station that could relate information to a VTS or even to the owner of the vessel if the VTS gave access to any of the information over the Internet. That's actually what the seaway is planning to do on the Great Lakes.

And those are AIS targets. That's the Halifax Harbor. That's a real-time image that is there. It's not a simulation. There are lots of vessels that are using AIS transponders in that region. Pilots carry aboard units. So, they bring units with them with transponder on board the vessel in the Halifax Harbor now.

The FINS is still under development for some 3D stuff, but the basic software is done. We're still under development with Saab because the final type-approval is not yet rubber stamped. So, there may still be some minor changes to be implemented in the software. We're trying to implement C-map chart format in the software. We're working on some other tracking modules with a different satellite company. Radar overlay where it's actually improving to a new version of radar hardware.

Real-time water level. We're still working on that for the moving unit, the ones that are using it on the water, because if you're in a section where there are multiple water level meters, it may be a curve or a straight line in between two of those stations. So, we're working to make some interpretation that is more accurate than just a straight line in between those two stations.

And enhanced AIS capability to be able within a fleet or within some vessel to send more information or receive more information. That's what the software looks like. I have actually overlaid S-57 data with note data. That's the Halifax Harbor in Canada. I could easily turn one off and keep the other one up on the screen. So that's S-57 data as you've seen with the Oasis software. We can remove any object or select what we want to display or not display. We could as well change the look of the chart depending on the depth that I want to implement there. So, if I put the deep water at 50 meters, it's going to change what the chart looks like. You've seen that there is some light blue that has come right here in between the 20 meter contour line and the 50 meter contour line, and that the harbor is not 50 meters deep.

And as well we do display simultaneously multiple formats of charts, so I have a raster date -- raster chart right there as well as S-57 data down below here. So we can seamlessly display what's available. So, if you're sailing in an area where there is S-57, you could choose to have S-57 loaded. Or if you rather sail on a raster one, you could load raster. It's up to the user.

And if you're going where there's only raster when there is S-57, it will reopen S-57 if that's what you have selected as your first type of chart that you want to have there. So if there are any questions, I'll be available at the end.

